

AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Appln. No. 08/977,052

*B1*  
*cont'd.*

polymer at said adhesive preparation temperature and the proportion of which is insufficient to cause precipitation of said polymer.

*3* *24.* (Amended) A process for the production of an organic electrolyte electric cell with a unitary structure comprising at least one pair of electrodes comprising:

a first electrode comprising the superposition of a first layer containing an electrochemically active material and a porous second layer of a polymeric material having a free face; and

a second electrode comprising a porous layer having at least one free face and containing an electrochemically active material, wherein said electrodes are assembled by adhesive bonding, bonding being carried out by coating an adhesive onto said free face of said porous layer of one of said two electrodes and then bringing said free face coated with a film of adhesive into contact with said free face of said porous layer of said other electrode to form an electrochemical couple, wherein said adhesive is a solution containing:

a polymer with the same chemical formula as said polymer constituting said second porous layer of said first electrode;

a solvent in which said polymer readily dissolves at [the] an adhesive preparation temperature; and

a non-solvent which is miscible with said solvent, which does not or only slightly dissolves said polymer at said adhesive preparation temperature and the proportion of which is

AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Appln. No. 08/977,052

insufficient to cause precipitation of said polymer, and wherein said solvent has a boiling point in the range 40°C to 80°C and said non-solvent has a boiling point of more than 100°C.

B  
cont.

18 25. (Amended) A process for the production of an organic electrolyte electric cell with a unitary structure comprising at least one pair of electrodes comprising:

a first electrode comprising the superposition of a first layer containing an electrochemically active material and a porous second layer of a polymeric material having a free face; and

a second electrode comprising a porous layer having at least one free face and containing an electrochemically active material, wherein said electrodes are assembled by adhesive bonding, bonding being carried out by coating an adhesive onto said free face of said porous layer of one of said two electrodes and then bringing said free face coated with a film of adhesive into contact with said free face of said porous layer of said other electrode to form an electrochemical couple, wherein said adhesive is a solution containing:

a polymer with the same chemical formula as said polymer constituting said second porous layer of said first electrode;

a solvent in which said polymer readily dissolves at [the] an adhesive preparation temperature; and

a non-solvent which is miscible with said solvent, which does not or only slightly dissolves said polymer at said adhesive preparation temperature and the proportion of which is

AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Appln. No. 08/977,052

insufficient to cause precipitation of said polymer, and wherein said electrochemical couple formed is rolled, dried for 10 minutes at a temperature of about 20°C and then vacuum dried for about 12 hours.

*Sub D2* 27. (Amended) The process claimed in claim 26 wherein said solvent is selected from a group consisting essentially of water and N-methylpyrrolidone.

Please add the following new Claims 30-43.

*Sub D3* 30. The process claimed in claim 24, wherein the mass of said solvent represents 75% to 90% of the total mass of said solvent and said non-solvent.

*Sub D3* 31. The process claimed in claim 24, wherein the mass of said polymer represents 10% to 20% of the mass of said adhesive solution.

*Sub D3* 32. The process claimed in claim 24, wherein said adhesive is heated to a temperature at which said polymer/solvent/non-solvent mixture is stable and homogenous during coating.

*Sub D4* 33. The process claimed in claim 24, wherein said polymer is selected from a group consisting essentially of polyvinylidene fluoride (PVDF), polyvinyl chloride (PVC),

AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Appln. No. 08/977,052

b3  
cont.  
Sub D  
cont.  
L  
polymethylmethacrylate, cellulose triacetate (CA), a polysulfone, a polyether, a polyolefin such as polyethylene (PE), polyethylene oxide (PEO), polypropylene (PP) and copolymers thereof.

34. The process claimed in claim 24, wherein said polymer is an alloy of polyvinylidene fluoride (PVDF) with a polymer selected from a group consisting essentially of polysulfone, polymethylmethacrylate, polyvinylpyrrolidone and copolymers of polyvinylidene fluoride and polytetrafluoroethylene (PTFE), polyvinylidene flouride and propylene hexafluoride and polyvinyl acetate (PVAC) and polyvinyl alcohol (PVA).

35. The process claimed in claim 24, wherein said polymer is an alloy constituted by a polymer selected from a group consisting essentially of polyurethanes, an acrylonitrile-butadiene copolymer, a styrene-butadiene-styrene copolymer, a styrene-isoprene-styrene copolymer, polyesters, amide block polyethers and a polymer selected from polyvinylidene fluroide and its copolymers, polyacrylonitrile, polymethylmethacrylate, polyvinylformal, polybutylmethacrylate and polyvinylchloride.

36. The process claimed in claim 35, wherein said polymer is polyvinylidene fluoride.

10  
37. The process claimed in claim 36, wherein said solvent is selected from acetone and tetrahydrofuran.

AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Appln. No. 08/977,052

*B3 Subj* 38. The process claimed in claim 36, wherein said non-solvent is selected from a group consisting essentially of butanol, propanol and ethylene glycol.

*(a)(1)* 39. The process claimed in claim 26, wherein said polymer is selected from a group consisting essentially of polytetrafluoroethylene, carboxymethylcellulose, hydroxypropylmethylcellulose, hydroxyethylcellulose, hydroxypropylcellulose, polyvinylidene fluoride and its copolymers, polyacrylonitrile, polyacrylic acid, polyacrylamide and mixtures thereof.

*Not* 40. The process claimed in claim *24*, wherein a thickness of said porous second layer of said first electrode is in a range 15  $\mu\text{m}$  to 100  $\mu\text{m}$ .

*15* 41. The process claimed in claim *24*, wherein, when dry, said adhesive is a porous film with a thickness in a range 5  $\mu\text{m}$  to 20  $\mu\text{m}$ .

*16b* 42. The process claimed in claim *24*, wherein a thickness of said first layer of said first electrode and the thickness of said porous layer of said second electrode are in a range 100  $\mu\text{m}$  to 160  $\mu\text{m}$ .